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**DRAFT ECONOMIC ANALYSIS
OF CRITICAL HABITAT DESIGNATION
FOR THE KOOTENAI RIVER POPULATION
OF THE WHITE STURGEON**

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1. INTRODUCTION AND BACKGROUND

1. In December 2000, the U.S. Fish and Wildlife Service (the Service) proposed designation of critical habitat for the Kootenai River population of the white sturgeon (*Acipenser transmontanus*) on approximately 11.2 miles of the Kootenai River in northern Idaho, down stream from the town of Bonners Ferry. The purpose of this report is to identify and analyze potential economic impacts that could result from the proposed critical habitat designation. This report was prepared for the U.S. Fish and Wildlife Service's Division of Economics by Bioeconomics, Inc., under subcontract to Industrial Economics, Incorporated.
2. Section 4(b)(2) of the Endangered Species Act (the Act) requires the Service to base proposed designation of critical habitat upon the best scientific and commercial data available, after taking into consideration the economic impact, and any other relevant impact, of specifying a particular area as critical habitat. The Service may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided that the exclusion will not result in extinction of the species.
3. Under the listing of a species, section 7(a)(2) of the Act requires Federal agencies to consult with the Service in order to ensure that activities they fund, authorize, or carry out are not likely to jeopardize the continued existence of the species. The Act defines "jeopardize" as taking any action that would appreciably reduce the likelihood of both the survival and recovery of the species. For designated critical habitat, section 7(a)(2) also requires Federal agencies to consult with the Service to ensure that activities they fund, authorize, or carry out do not result in destruction or adverse modification of critical habitat. Adverse modification of critical habitat is defined as any direct or indirect alteration that appreciably diminishes the value of critical habitat for the survival and recovery of the species.
4. This analysis must distinguish between economic impacts caused by the listing of the Kootenai River population of the white sturgeon (sturgeon) as endangered and those additional effects that would be caused by the proposed critical habitat designation. It is important to recognize this distinction because future listing impacts will remain unaffected by critical habitat designation and thus constitute part of the baseline for this analysis. While this analysis identifies some of the baseline effects in an attempt to differentiate those that may be attributable to the proposed designation, they are not quantified in any meaningful way because such information lies beyond the scope of an economic analysis for a proposed regulation. To evaluate the increment of economic impacts attributable to the critical habitat designation for the sturgeon, above and beyond the listing, the analysis assumes a without-critical-habitat baseline and compares it to a with-critical-habitat scenario. The difference between the two is a measure of the net change in economic activity that may result from the designation of critical habitat for the sturgeon. In the event that a land use or activity would be limited or prohibited by another existing statute, regulation, or policy, the economic impacts associated with those limitations or prohibitions would not be attributable to

critical habitat designation.¹

5. The critical habitat designation for the sturgeon encompasses land owned or managed by the State of Idaho and a private owner of Shorty's Island, within the Kootenai River. This analysis assesses how critical habitat designation for the sturgeon may affect current and planned land uses and activities on these lands. For private land subject to critical habitat designation, consultations and modifications to land uses and activities can only be required when a Federal nexus, exists and such activity may affect a listed species or its designated critical habitat. A Federal nexus arises if the activity or land use of concern involves Federal permits, Federal funding, or another form of Federal involvement. Activities on private land that do not involve a Federal nexus are not affected by critical habitat designation.
6. In addition to the lands contained within the proposed critical habitat designation, this report will examine upstream activities either controlled by Federal agencies or sponsored or permitted by Federal agencies which could potentially impact the proposed critical habitat area.
7. To be considered in the economic analysis, activities must be "reasonably foreseeable," including, but not limited to, activities which are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. Current and future activities that could potentially result in section 7 consultations or modifications are considered.

1.1 Description of Species and Habitat

8. The Kootenai River population of the white sturgeon (*Acipenser transmontanus*) is one of 18 land-locked populations of white sturgeon known to occur in western North America. Kootenai River white sturgeon occur in Idaho, Montana, and British Columbia, and are restricted to approximately 168 miles of the Kootenai River extending from Kootenai Falls, Montana (31 miles below Libby Dam, Montana), downstream through Kootenay Lake to Corra Lynn Dam, in British Columbia. The Kootenai River white sturgeon has been isolated in this river reach since the last glacial advance roughly 10,000 years ago².

¹ While listing effects can be significant in some cases due to the prohibition on "taking" or "jeopardizing" a listed species, Congress specifically directed the Service to base its listing decisions strictly on biological considerations. Consequently, economic analyses are only conducted for the designation of critical habitat. The incremental approach, which is consistent with economic theory, has been ratified through guidelines published by the Office of Management and Budget (*Economic Analysis of Federal Regulations Under Executive Order 12866*, Office of Management and Budget, January 11, 1996.)

² Information on the sturgeon and its habitat is taken from the *Proposed Designation of Critical Habitat for the Kootenai River Population of the White Sturgeon*, December 21, 2000

9. In identifying areas as critical habitat for the sturgeon, the Service considered those physical and biological features which are essential to the conservation of the species. From studies of the habitat, life history, and population biology of the sturgeon, the Service has determined the primary constituent elements of critical habitat for the species. These primary constituent elements (PCEs) of Kootenai River sturgeon critical habitat are:
- A water flow regime augmented by reservoir releases to recreate a hydrologic profile characterized by flow magnitude, timing, and velocity, and water depth and quality (including temperatures) necessary for normal behavior involving breeding site selection, breeding and fertilization, and cover for egg incubation and yolk sac fry development.
 - A water flow regime augmented by reservoir releases to recreate a hydrologic profile characterized by water of sufficient duration and magnitude to restore or maintain riverbed substrate necessary for cover and shelter for both incubating eggs and yolk sac larvae.
 - Water and sediment quality necessary for normal breeding behavior and viability of early life stages including both incubation eggs and yolk sac larvae.
10. The area proposed by the Service for designation as critical habitat for the sturgeon provides these PCEs and requires special management considerations or protection to ensure their contribution to the species' recovery.

1.2 Proposed Critical Habitat

11. The proposed critical habitat designation includes approximately 11.2 miles of the Kootenai River in northern Idaho, downstream from the town of Bonners Ferry within Boundary County, Idaho, from river mile 141.4 to river mile 152.6. The lateral extent of the proposed critical habitat unit is up to the ordinary high water line (as defined by the U.S. Army Corps of Engineers, in 33 CFR Part 329.11) on each bank of the Kootenai River within the 11.2 mile reach. The area designated as critical habitat is currently occupied by the sturgeon.

2. FRAMEWORK, METHODOLOGY, AND IMPACTS

(65FR80697).

2.1 Framework for Analysis

12. As noted above, this economic analysis examines the impacts to land owners of areas designated as critical habitat for the sturgeon as well as to other potentially affected parties. An impact of critical habitat designation includes any effect of the designation above and beyond those impacts associated with the listing of the species. This report employs a framework that compares economic activity with critical habitat designation to economic activity without critical habitat designation. The without-critical-habitat baseline for analysis represents current and expected economic activity under all modifications prior to critical habitat designation, including protections already accorded to the sturgeon under the listing as endangered. The difference between the two scenarios measures the net change in economic activity attributable to the designation of critical habitat for the sturgeon.

2.2 Methodological Approach

13. This report relies on a sequential methodology and focuses on distilling the relevant aspects of potential economic impacts of designation. The methodology consists of:
- Considering the specific activities that take place, or are likely to take place, on the areas affected by critical habitat designation;
 - Identifying whether these activities are likely to involve a Federal nexus;
 - Evaluating the likelihood that the activities may result in section 7 consultations because of critical habitat designation and, in turn, that such consultations could result in modifications to projects;
 - Estimating costs of any expected section 7 consultations and project modifications attributable to critical habitat designation;
 - Determining the magnitude of any benefits that may be associated with the designation of critical habitat; and
 - Assessing whether critical habitat designation could create significant economic impacts for a substantial number of small businesses as a result of estimated effects.

2.3 Information Sources

14. The primary sources of information for this report were communications with personnel from the Service and affected Federal agencies, and the State of Idaho, the primary landowner.

Publicly available data (e.g., information available on the Internet) were also used to augment the analysis.

2.4 Land Ownership and Consultation History

15. The proposed critical habitat lies within the ordinary high water lines of the Kootenai River as defined by the Army Corps of Engineers for regulatory purposes (33 CFR part 329.11). When Idaho became a state in 1890 it claimed ownership of the bed of the Kootenai River up to ordinary high water lines. Numerous private, public, and tribally-owned parcels abut this State-owned riverbed, including lands managed by the Service at the Kootenai National Wildlife Refuge and trust lands managed by the Kootenai Tribe of Idaho. Based upon early U.S. Forest Service (USFS) maps from 1916, USGS maps from 1928, and the confining effects of the Corps' levees constructed in 1961, it appears that within this reach of the Kootenai River the ordinary high water lines originally delineating State lands are essentially unchanged. Because of the scales of the available maps, it is possible that minor river channel changes have occurred since statehood, and that some small portions of private lands may now occur within the ordinary high water lines. However, most of the lands where these changes may have occurred likely lie within the flowage and seepage easements purchased by the Federal government under Public Law 93-251, Section 56, passed in 1974. Thus, the Service believes the lands proposed as critical habitat are almost exclusively within lands owned by the State of Idaho. The one exception to this ownership pattern concerns "Shorty's Island." Shorty's Island is the one clearly defined piece of private land lying within the proposed critical habitat area. This island is approximately 80 acres in size and is currently undeveloped with no vehicle access, power or structures. The island is held by one owner. The one definable activity on the island is the occasional trespass of cattle from adjacent land to the island for foraging. Although proposed critical habitat does not include this generally forested island, the island is surrounded by the ordinary high water line and bed of the Kootenai River.
16. Since the listing of the sturgeon in September of 1994, the Service has addressed three minor and two major activities through the section 7 consultation process. The three minor activities all involved informal consultations associated with section 404 Clean Water Act permits. Two of the informal consultations were on installation of pump intakes below the ordinary high water line, one for the Kootenai NWR and one for the Kootenai Tribe of Idaho. The third informal consultation was on the construction of a coffer dam at Bonners Ferry for the repair of a rupture in the gas line crossing the river there. As this history indicates, the Service has been aware of activities in this area and their impact on the sturgeon for some time, and has been actively consulting on all relevant projects since the listing.
17. The two formal consultations both involved the operations of Libby Dam, upstream from the proposed critical habitat. Libby Dam was constructed before the Act was enacted. When the Kootenai sturgeon was listed, the Army Corps of Engineers, as lead action agency, consulted on ongoing operations of the dam, resulting in a "jeopardy" finding. The mitigation actions

resulting from this consultation dealt with the timing and volume of the water releases from the dam. The major effect of the mitigation actions on the area now proposed for critical habitat was augmentation of sturgeon spawning and early life stage flows following the peak of runoff of the lower Kootenai River Basin, below Libby Dam. Recently, formal section 7 consultation involving the sturgeon on the Federal Columbia River Power System, including Libby Dam, was reinitiated, and a final biological opinion was completed in December, 2000. Recommendations from the Biological Opinion included further flow increases.

2.4 Impacts

18. This section addresses specific economic impacts of critical habitat designation for the sturgeon on landowners and other potentially affected parties within the proposed critical habitat area. On the whole, critical habitat designation for the sturgeon is not likely to pose an incremental direct impact to the owners and managers of land within proposed critical habitat. This conclusion is based on the fact that the designation of critical habitat for the sturgeon does not provide any new information about the distribution of the sturgeon, nor does it increase or change the existing regulatory burden posed by the listing on land owners and other affected parties. Therefore, the designation of critical habitat for the sturgeon will likely have no direct incremental economic impacts.
19. Activities that could potentially affect the sturgeon, past section 7 consultations in the proposed critical habitat area associated with the listing of the sturgeon, and reasonably foreseeable future actions are identified below for each land owner or manager.

State of Idaho

20. As noted, nearly all of the land included in the proposed critical habitat unit for the Kootenai sturgeon is owned by the State of Idaho. This land is described as being below the ordinary high water mark of the river, as such is not subject to most development pressures. Within the reach of the critical habitat designation there is a U.S. Highway bridge, a railroad bridge, and a natural gas line. Both the Highway and railroad bridges have been relatively recently improved, and there are no known additional improvements planned for these river crossings.³ Likewise, there are no known plans for either replacing or upgrading the natural gas line that runs under the river.⁴ Also, within the area of proposed critical habitat, the City of Bonners Ferry releases domestic wastewater. This and any new point source discharges would be

³ Personal Communication, State of Idaho, Department of Lands, Boise, ID.

⁴ Personal Communication, State of Idaho, Department of Lands, Boise, ID, and USFWS Biologist, Spokane Field Office, and Fish and Wildlife Programs Director, Kootenai Tribe of Idaho.

addressed through National Pollution Discharge Elimination System permits and associated section 7 consultations with the U.S. Environmental Protection Agency. Should adjacent landowners initiate levee maintenance projects, their activities would be subject to Corps of Engineers regulation under section 404 of the Clean Water Act and associated section 7 consultation. Contacts with Idaho Department of State Lands revealed no known current or planned activities on the state-owned lands within the proposed critical habitat unit which would have Federal involvement. While there are no known “planned” activities associated with the transportation and utility corridors that currently cross the portion of the river proposed as critical habitat, it is entirely likely that these facilities will require either upgrading, or emergency repairs at some point in the foreseeable future. Any of these possible future activities involving a Federal nexus would likely necessitate consultation with the Service. However, due to the presence of the sturgeon within the proposed habitat, and considering the history of listing-related consultations on the species, any such future consultations would be due to the listing of the species and not critical habitat designation. Therefore, with regard to the land owned by the State of Idaho within the proposed critical habitat area, there are no additional anticipated costs associated with designation of critical habitat for the sturgeon over those that may be associated with the presence of the sturgeon as a federally protected species.

Private Landowners

21. Aside from the land owned by the State of Idaho, there is one known privately held parcel within the boundaries of the proposed critical habitat unit. This parcel, Shorty’s Island, is an approximately 80 acre island on the west shore of the river, and is currently undeveloped. The only known consistent use of the island is for occasional cattle grazing. At the present time, there are no known plans for activities on Shorty’s Island that would involve a Federal nexus.⁵ However, as with the State-owned land within the unit, were an activity proposed on the private land within the unit affecting sturgeon habitat, and involving a federal nexus, any resulting consultations and associated costs would be due to the listing of the sturgeon as an endangered species, and the species’ presence within this river section rather than the new designation of critical habitat for the species. This finding is consistent with the history of informal consultations by the service, triggered by the listing of the sturgeon, on relatively minor activities within the proposed critical habitat area.

Additional Federal Activities Inside and Outside the Proposed Critical Habitat

22. The proposed critical habitat area is heavily impacted by Federally sponsored activities that take place outside of the boundaries of the proposed unit. Specifically, the operation of the Libby Dam, a component of the Federal Columbia River Power System, controls the hydrologic profile of the river through the proposed unit, and therefore controls the extent to which the

⁵ Personal Communications, USFWS Biologist, Spokane Field Office.

primary constituent elements of critical habitat for the sturgeon are present within the unit. The importance of the operation of Libby Dam to the sturgeon is underscored by the two formal consultations on the operation of the dam, which have been completed since the listing of the species. These two consultations also underscore that the operation of this facility involves overlying jeopardy concerns by the Service, for the species.

23. Conversations with Service Biologists from the Spokane Field Office indicate that, like the two historical consultations on the operation of the dam, any future new or reinitiated consultations on issues related to the Libby Dam or its operations would likely occur regardless of critical habitat designation out of jeopardy concerns for the species. Therefore, there are no additional anticipated costs associated with critical habitat designation for the sturgeon over and above any costs associated with consultations on activities that are due to the presence of the sturgeon within the unit, and its listing as an endangered species.
24. An additional potential Federal activity impacting the proposed critical habitat area for the sturgeon involves the potential for future repair activity on existing dikes bordering the Kootenai River along the critical habitat area. At the present time, an initial reconnaissance study is being undertaken by the Corps on the issue of levy erosion and groundwater seepage during periods of high river flows. Conversations with the Seattle office of the Army Corps of Engineers indicate that the results of the initial study and potential actions resulting from it are unknown at this time.⁶ Service personnel in the Spokane Office of the U.S. Fish and Wildlife Service indicate that even if a dike reconstruction effort were to be undertaken in the foreseeable future, any section 7 consultations on the activity between the Corps and the Service would be required due to jeopardy concerns regardless of critical habitat designation. As a result, such impacts would be attributable to the listing of the sturgeon and would not represent an incremental cost associated with critical habitat designation.⁷

2.5 Benefits

25. As mentioned above, the designation of critical habitat for the sturgeon is not likely to impose any incremental regulatory burden on State and private land owners and managers, or on Federally sponsored activities outside of the proposed critical habitat unit. Therefore, there are not likely to be any direct incremental benefits attributable to the critical habitat designation either, as any possible direct benefits would (like potential costs) be attributable to the species presence within the unit and the protections afforded the species under listing as an endangered species.

⁶ Personal Communication, U.S. Army Corps of Engineers, Seattle Office, January 16, 2001.

⁷ Personal Communications, USFWS Biologist, Spokane Field Office.

2.6 Summary of Impacts

26. Exhibit 1 summarizes the potential for new consultations and the expected costs and benefits that will result from critical habitat designation for the sturgeon.
27. The proposed critical habitat unit for the Kootenai River population of the white sturgeon is currently occupied by the species. Since the sturgeon was listed in 1994, the Service has engaged in both informal and formal consultations on activities potentially impacting the sturgeon and its habitat. While the pattern of past consultations involving the species indicates that future similar consultations may also occur, any such future consultations within this one, occupied critical habitat unit would occur regardless of the status of critical habitat designation for the sturgeon. In the case of the sturgeon, it is not expected that the designation of critical habitat, as currently proposed, will impose any additional regulatory burden or economic costs associated with future activities involving the species and its habitat.

Exhibit 1 SUMMARY OF ECONOMIC IMPACTS ASSOCIATED WITH CRITICAL HABITAT DESIGNATION FOR THE KOOTENAI RIVER WHITE STURGEON					
Land Owner or Manager	Reasonably Foreseeable Activities and Land Uses affecting Proposed Critical Habitat	Federal Nexus	Likelihood of New or reinitiated Consultations triggered by <u>Critical Habitat</u>	Potential for Incremental Costs	Potential for Incremental Benefits
State of Idaho	None known at this time	None known at this time	none	--	--
Private Landowner (Shorty's Island)	None known at this time	None known at this time	none	--	--
Federal activities within and outside of proposed critical habitat	Operations of Libby Dam and Possible dike repair	Army Corps of Engineers	none	--	--

2.7 Potential Impacts to Small Businesses

28. Under the Regulatory Flexibility Act (as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever a Federal agency is required to publish

a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions).⁸ However, no regulatory flexibility analysis is required if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

29. As noted, the designation of critical habitat for the sturgeon is not likely to directly or indirectly impact any small entities.

⁸ 5 U.S.C. 601 et.seq.

REFERENCES

Personal Communication, Biologist, Spokane Field Office, U.S. Fish and Wildlife Service. November 21, 2000.

Personal Communication, Idaho Department of State Lands, Surface Water Division, Boise, Idaho. December, 2000.

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Personal Communication, U.S. Army Corp of Engineers, Seattle, Washington Office. January, 2001.

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